

Executive Summary

The Joint Methodology to Assess Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) Architecture (JMACA) Joint Test & Evaluation (JT&E) tests, evaluates, and enhances the JMACA Methodology (JM). The JM consists of a set of analytical tools and procedures designed to rapidly identify deficiencies in C4ISR architectures and identify appropriate solutions. The JT&E specifically focuses on the Commander Joint Task Force's (CJTF) need to rapidly assess the interoperability of an integrated Joint C4ISR architecture prior to employment. Implementation of the JM prior to employment would ensure C4ISR systems interoperability before Joint Task Forces arrive in theater, thereby enhancing the Commander's ability to conduct rapid and decisive operations. The JMACA JT&E validates the JM through a risk mitigation demonstration of data mining, participation in Distributed Testbed C4ISR end-to-end testing, participation in two large-scale Joint Task Force (JTF) training exercises, and participation in an operational exercise. Although the JT&E is focused at the JTF level, the JM can also be applied to the Combatant Commander's theater, Component Command, Service, and to Coalition Force architectures.

ES.1 The JMACA Methodology (JM)

Figure ES-1 illustrates the JM step-by step.

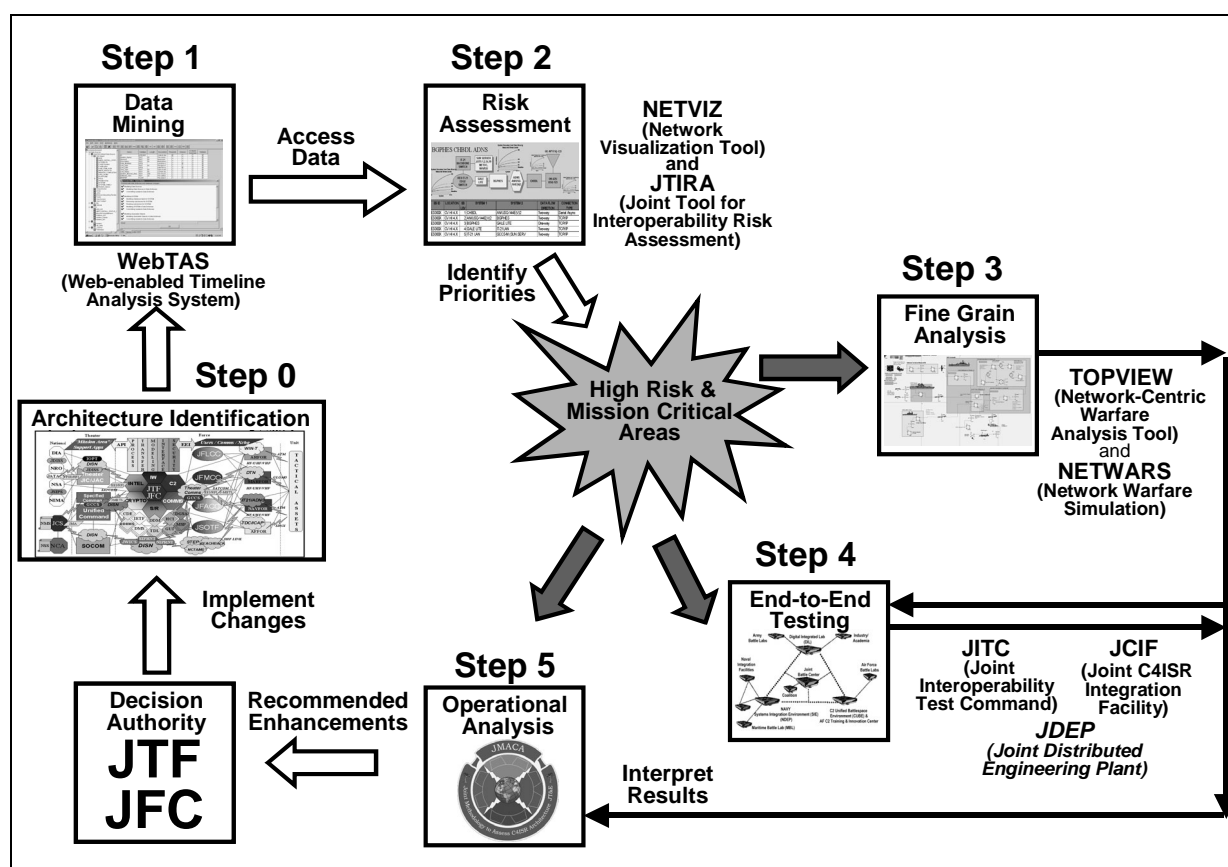


Figure ES-1 JMACA Methodology (JM) Step by Step

The JM is a series of steps based on a logical sequence of inputs and outputs allowing the user of the JM to obtain a broad assessment of the C4ISR architecture and to pursue more in-depth analysis as time permits. The JM utilizes a toolset to determine areas of high risk in components of Joint C4ISR architectures.

The JM toolset utilizes specific C4ISR architecture data as input parameters and then processes the data to determine the high risk and mission critical areas in the C4ISR architectures (depicted by the shaded area in the center of Fig ES-1). JM flexibility enables solutions to deficiencies to be investigated at any point the user deems appropriate. For example, identified prioritized risk assessment areas can enter fine-grain analysis (Step 3), end-to-end testing (Step 4), or operational analysis (Step 5) depending on time and resources available for investigation.

Recommended enhancements to the architecture will be passed to the JTF/ Joint Force Commander (JFC) decision authority for review. If significant changes to the architecture are approved, the JM can be used to provide similar re-assessment of the revised architecture.

ES.2 Problem Statement and Primary Issues

The JMACA problem statement states:

The Joint Task Force Commander has insufficient means to rapidly identify deficiencies and solutions within the C4ISR architecture.

This problem statement is the fundamental basis which guides the development of the test issues, metrics, and test objectives that form the core of the Program Test Plan (PTP).

The primary issues the JMACA JT&E addresses are:

ISSUE 1:

How well does the JM support the assessment of the JTF C4ISR architecture?

ISSUE 2:

How suitable is the JM for use by the CJTF during the C4ISR architecture development process?

ES.3 Objectives

The primary objective of the JMACA JT&E is to validate the effectiveness and suitability of the JM to assess a JTF C4ISR architecture. The JMACA JT&E also:

1. Demonstrates the data needed to execute the JM toolset is available and retrievable in time to execute the JM.
2. Executes the analytical toolset of the JM for a JTF C4ISR architecture and compare the predicted risks and deficiencies with deficiencies observed during test events.
3. Demonstrates predicted deficiencies and recommended solutions can be tested in a testbed environment.
4. Provides for a systematic process for JM enhancement.
5. Employs the JM in diverse Joint C4ISR environments.
6. Provides an effective and suitable tool to the warfighter.

The JMACA test concept includes a combination of scheduled Joint exercise events and testbed tests of key features of the JM using realistic JTF C4ISR architectures. The JMACA JT&E delivers a set of legacy products that is envisioned to improve the CJTF's ability to assess C4ISR architectures.

ES.4 Test Execution

Major milestones of the JMACA JT&E are summarized in Figure ES-2.

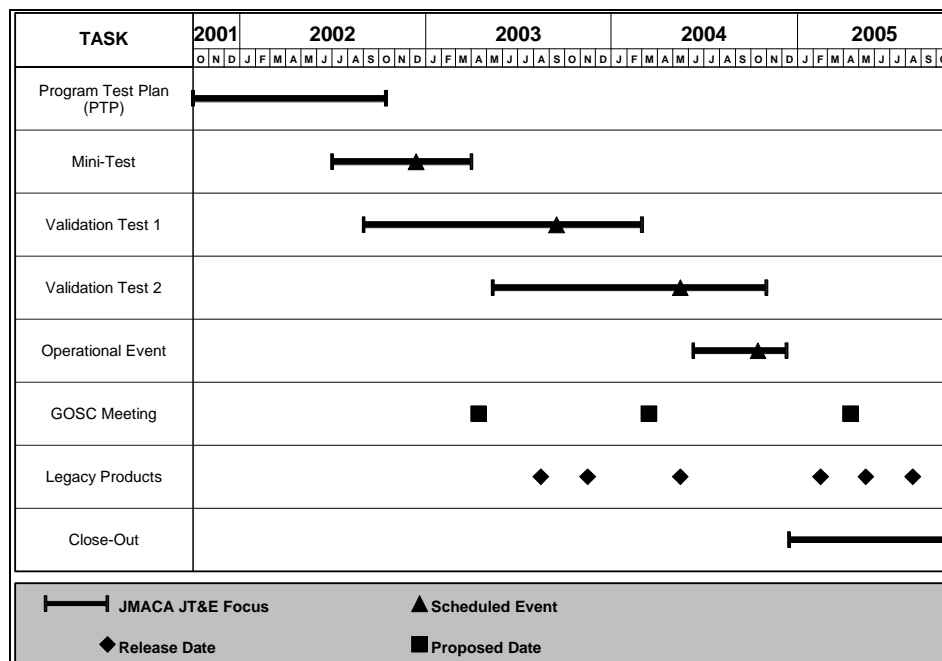


Figure ES-2 JMACA JT&E Major Milestones

ES.5 Management

The Joint Test Director (JTD), Captain Roberta McIntyre, USNR, heads a test team of approximately 40 personnel, organized functionally, to execute the JT&E as depicted in Figure ES-3. Each functional area, headed by a senior members of the JMACA test team, includes a mix of experienced military, government, and civilian contractor personnel.

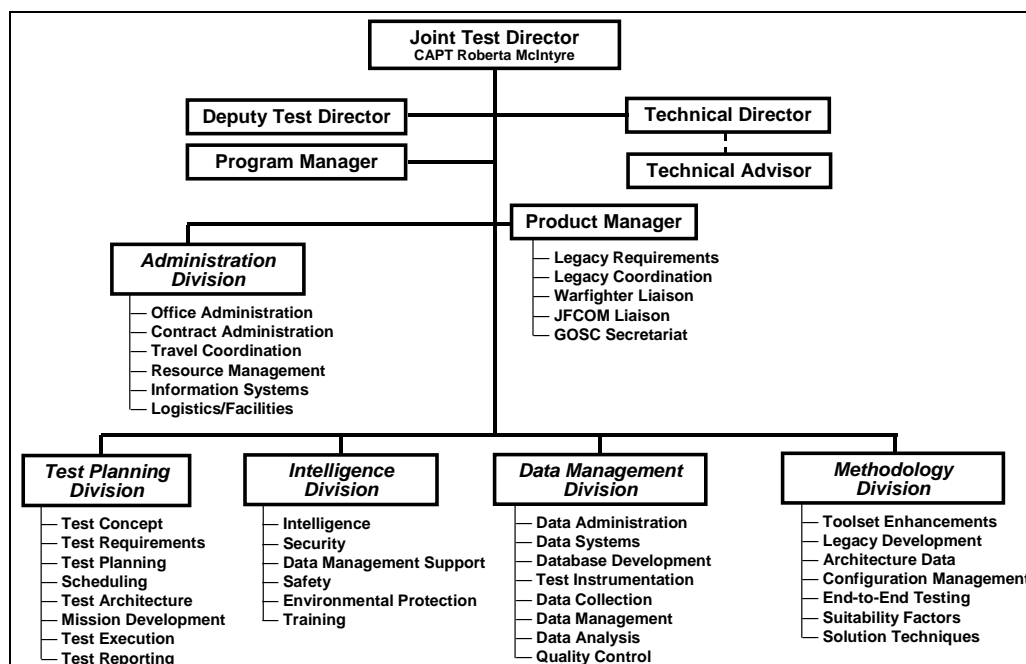


Figure ES-3 JMACA JT&E Organization

ES.6 General Officer Steering Committee (GOSC)

The GOSC functions as the warfighter's steering group for the JMACA JT&E. The JMACA JT&E GOSC will include representation of the four Services, Joint commanders, and the JCS from the following organizations: JT&E Program Director; Assistant Secretary of Defense for Command, Control, Communications and Intelligence (ASDC3I); Joint Staff J6; US Joint Forces Command J6; Commander, Aerospace Command & Control, Intelligence, Surveillance, and Reconnaissance; Office of the Chief of Naval Operations N70; Commanding General, US Army Signal Center; and Deputy Chief of Staff of the Army, Research, Development, and Acquisition. The GOSC will provide any recommendations and necessary support to the JTD.

ES.7 Legacy Products

Legacy products are the desired result of the JMACA JT&E, providing the means to implement and institutionalize the knowledge, recommendations, and conclusions learned during the life of the program. The principal JMACA JT&E legacy products are:

- Data Mining Strategy and Associated Tools.
- Validated JMACA Methodology (JM) and Toolset.
- JM Instruction and Training Tools.
- Draft Joint Tactics, Techniques, and Procedures (JTTP).
- Standing C4ISR Architecture Assessment Team.
- JMACA JT&E Test Reports.
- Doctrine, Organization, Training, Materiel, Leadership, Personnel, and Facilities (DOTMLPF) input for assessing joint C4ISR architectures.